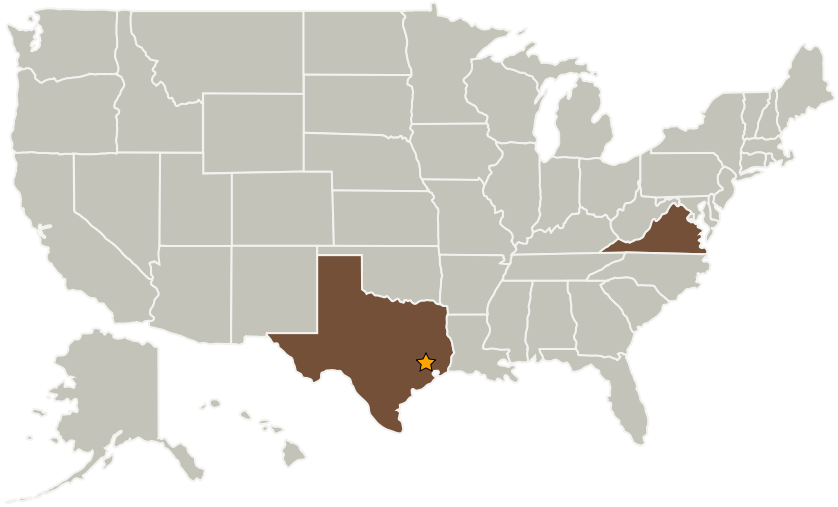
Conformal Space Suit Antenna Development for Enhanced EVA Communications and Wearable Computer Applications, Phase II

Completed Technology Project (2009 - 2011)

Project Introduction

As NASA prepares for the Constellation Space Missions and Extra-Vehicular Activity (EVA) on the moon by 2018, astronauts will be required to spend more time exposed to the hazards of EVA operations. Providing reliable communications is imperative during current EMU/ISS operations as well as future Constellation Missions. Communications during EVA is required to relay progress regarding the task and to monitor the health and ability of the astronaut to perform in hazardous environments. Therefore, in order to improve astronaut mobility and space communications, Applied EM, Inc. will apply the results of Phase I to develop and demonstrate a prototype multi-frequency design of a conformal, flexible, body-worn antenna that can be integrated into space suit designs to enhance UHF communications during EVA operations. In addition, the antenna design has multi-frequency capability that enables wireless bio-med telemetry for wearable computer applications during space operations. NASA's new Constellation Space Suit System (CSSS) will provide new space suit designs to improve the astronaut's mobility, efficiency, and safety while wearing the space suit during long periods of EVA operations. Therefore, the objectives for Phase II will consider antenna designs for both near term and far term space mission applications.

Primary U.S. Work Locations and Key Partners



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Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Center / Facility:

Johnson Space Center (JSC)

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

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Organizations Performing Work	Role	Type	Location
★Johnson Space Center(JSC)	Lead Organization	NASA Center	Houston, Texas
Applied EM, Inc.	Supporting Organization	Industry	Hampton, Virginia

Primary U.S. Work Locations	
Texas	Virginia

Project Transitions

January 2009: Project Start

February 2011: Closed out

Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Technology Areas

Primary:

- TX06 Human Health, Life Support, and Habitation Systems
  - TX06.2 Extravehicular Activity Systems
    - TX06.2.3 Informatics and Decision Support Systems